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Tables are located at the end of the manuscript.

The new EIA Directive (2014/52/EU) and UK water impact assessment practice

Stephen E. Mustow

WYG Environment Planning Transport Ltd, WYG Group, Leeds, UK

Email: steve.mustow@wyg.com. WYG, Arndale Court, Headingley, Leeds, LS6 2UJ, UK. Tel: +44 (0)113 219 2513

The New EIA Directive (2014/52/EU) and UK Water Impact Assessment Practice

This paper considers how impact assessment practice relating to all aspects of the water environment will be affected by the transposition of the amended Environmental Impact Assessment (EIA) Directive (2014/52/EU) into UK legislation. Key elements of the new Directive are identified, such as requirements relating to monitoring, climate change (including adaptation), biodiversity, human health and co-ordination with Water Framework Directive (2000/60/EC) (WFD) Assessment. The extent to which existing guidance and practice already meet these new requirements is assessed, through a review of relevant guidance and selected Environmental Statements. Key areas where Water Impact Assessment (WIA) practice needs to be adapted to take account of the new requirements are identified. Substantial changes in practice are likely to be required to incorporate human health assessment into WIA and to demonstrate that competent experts are used to conduct WIA. New guidance will be needed relating to competent experts and improved guidance will be required for WFD Assessment.

Keywords: water; impact assessment; Directive (2014/52/EU); transposition; practice

Introduction

The new EIA Directive (2014/52/EU) (European Parliament and Council 2014) introduces a number of additional requirements for EIA in European Member States, many of which are directly relevant to Water Impact Assessment (WIA). The UK recently held a referendum resulting in a narrow majority vote to leave the European Union (commonly referred to as ‘Brexit’). However, it is not yet clear when Brexit will take place, with the formal departure likely to be at least a year away. It is also not clear what form Brexit will take, and under some scenarios the UK will still be required to comply with European law. As the new EIA Directive requires Member States to ‘bring into force the laws, regulations and administrative provisions necessary to comply with

this Directive by 16 May 2017' it is very likely that the Directive will be enacted in the UK and will therefore apply at least in the short term. At the time of writing (November 2016) the Scottish Government (SG 2016) and Welsh Government (WG 2016) have undertaken consultation on transposing the new EIA Directive, but the English and Northern Irish administrations are yet to do so.

The quality of WIAs in England and Wales has previously been reviewed by Badr et al. (2004). They reviewed a sample of 50 Environmental Statements (ESs) for development proposals in England and Wales and used a 'Water Impact Assessment Review Checklist' to assess the quality by which impacts on the aquatic environment were addressed. They concluded that although WIA practices had improved over time a significant proportion of assessments remained unsatisfactory, particularly in relation to the core elements of WIA such as the consideration of alternatives and impact prediction. The current paper adopts a broad definition of WIA, including the elements included under the headings of 'Water', 'Freshwater ecology' and 'Coastal ecology and geomorphology' by Morris and Therivel (2001).

Fischer et al. (2016) have undertaken a review of the implications of the new EIA Directive for general EIA practice in England. They note that changes resulting from the new EIA Directive will 'apply in particular to screening, integration with other processes and monitoring. There are also some more minor changes to scoping'. The new EIA Directive will also be transposed into legislation in the other European member states. A recent special issue of 'UVP-report' considered how national EIA laws might be affected in 15 EU member states, more than half of the total number. The editorial noted that 'there are many similarities but also some differences with regards to what the change from 'old' to 'new' means in different member states' (Fischer 2016). The recommendations from the current paper are therefore likely to have

relevance for other European countries. Additionally, the improvements to EIA implemented through the new EIA Directive have wider relevance to international practice. That is because EIA systems in Western Europe are considered to be more advanced than in several other regions including Africa, the Middle East and South America, as well as parts of Asia and Central and Eastern Europe (Glasson et al. 2012).

Context

As well as having implications for EIA practice in general, transposition of the new EIA Directive also has implications for impact assessment in specialist topic areas, including WIA. It is important for legislators, policymakers and practitioners to understand these implications, as transposing the new EIA Directive provides the opportunity to improve the quality of WIA, which has been identified as being deficient in certain areas (Badr et al. 2004). Also, where WIA practice already meets the new requirements, it is advisable that changes in legislative requirements are kept to a minimum, to avoid adding cost and complexity to the process. It is also important that suitable guidance is in place to enable practitioners to conform to new legislative requirements relating to WIA. To address these issues this paper identifies the extent to which existing WIA practice in the UK meets the requirements of the new EIA Directive. Where gaps are found to exist the changes that will be needed to practice and supporting guidance are identified.

Methodology

The new EIA Directive was reviewed to identify the implications that are specific to and/or are particularly significant for WIA practice in the UK. Fischer et al.'s (2016) paper was consulted to understand and compare the implications for wider EIA practice in the UK. A list of the new requirements particularly relevant to WIA was produced as

a result of this exercise, together with notes of the potential implications for UK WIA practice.

Key guidance relevant to WIA was reviewed to determine which aspects of the water environment are covered and whether there will be gaps in respect of new requirements arising from transposition of the new EIA Directive. Guidance relevant to England was primarily, but not exclusively, included in this review as similar guidance is usually available for the devolved administrations. This approach was considered to provide a reasonable overview of the available guidance and to determine how sufficient it will be in supporting quality WIA following transposition of the new EIA Directive.

To further understand how WIA practice in the UK may be affected by the new EIA Directive, the WIA chapters of eight Environmental Statements (ESs) published in 2016 were reviewed (see Table 1). The WIA chapters were not always single chapters, or specifically labelled as 'water environment', and included chapters labelled using terms such as flooding, hydrology and water quality. A broad view was therefore taken and any chapters that obviously covered the water environment were included in the review, plus any potentially associated chapters (e.g. on ecology and land contamination). The review considered whether or not the WIA of each ES would meet the new requirements arising from the new EIA Directive (these requirements had already been identified following the methodology described above). For each new requirement it was therefore possible to determine how many of the eight WIAs would be compliant. In instances where a lack of compliance was identified the scale of change that would be required to achieve compliance was estimated.

The ESs were selected to cover a range of development types, including: deepwater jetty; mainline rail; river dredging; gas-fired power station; onshore

windfarm; slate quarry; tidal energy project; and new motorway section. The windfarm project was in Scotland, the tidal energy and motorway projects in Wales and the remainder were in England. Copies of the ESs were provided on loan from IEMA and each had been produced by a different consulting company. All of the companies were IEMA EIA Quality Mark registrants, therefore the quality would be expected to be relatively high. As such, the conclusions in relation to the degree to which existing WIA practice already meets the requirements of the new EIA Directive are likely to represent a 'best case' scenario. That is because WIAs carried out by non IEMA EIA Quality Mark registrants are likely to be of lower quality. Eight ESs represents a relatively small sample, for example in relation to the work of Badr et al. (2004) who reviewed 50 ESs. However, it is considered that this represents a reasonable 'snapshot' of current practice, sufficient to allow high level conclusions to be drawn.

Results

The potential implications for UK WIA practice of transposing the new EIA Directive are summarised in Table 2.

The review of WIA guidance found that there is no single source covering all aspects of WIA in the UK, but that that these aspects are covered by a combination of sources. The key guidance is outlined in Table 3, including a note of the relevant areas covered.

Table 4 records the results of the review of the WIAs from eight ESs, in relation to compliance with the requirements of the new EIA Directive (these requirements having been identified in Table 2). The table records how many of the WIAs would meet the new requirements, where appropriate making recommendations for changes to WIA practice and estimating the scale of these changes.

Discussion

Requirements which may require substantial changes to current practice

Two of the new requirements are predicted to give rise to substantial changes to current practice, including those relating to human health and competent experts. Only one of the Environmental Statements specifically considered human health in relation to the water environment. This was the river dredging ES which assessed the impact of mobilisation of silt by dredging causing an increase in bacterial numbers, which could affect the quality of bathing waters and cause indirect risks to human health. Four of the ESs briefly considered the possible risks to human health from contaminated groundwater, but this was within the contaminated land chapters / sections. Given the requirement of the new EIA Regulations to consider human health effects, it is recommended that this is included in the WIA in an appropriate manner. One option is provided by Vohra (2005), who recommends that integrated Environmental and Health Impact Assessment (iEHIA) should include a separate chapter on health, with other topic chapters also including sections on health, all linked to a detailed health impact assessment matrix in the appendix. However, adoption of such an approach risks increasing the size and complexity of ESs and a more proportionate approach may therefore be preferable, particularly for developments that are not likely to result in significant health effects.

The Scottish Government (SG 2016) and Welsh Government (WG 2016) consultation documents on transposing the new EIA Directive considered that replacing the previous term ‘human beings’ with the new term ‘population and human health’ would not greatly impact legislative requirements. However, even if that is the case and ‘human health’ broadly equates to ‘human beings’, the current research still

demonstrates that WIA practice needs to be improved in this area, particularly given that the new EIA Directive specifically links human health with 'water contamination'.

None of the ESs provided the names and qualifications of the individuals who undertook either the WIA or the wider EIA. In future it will be necessary to demonstrate that the WIA and wider EIA have been undertaken by competent experts, although it is not yet clear how 'competent experts' will be defined. The Scottish Government (SG 2016) and Welsh Government (WG 2016) consultation documents do not propose including details of how competent experts are defined in the legislation. However, the Welsh consultation document (WG 2016) does 'propose to include a requirement in the legislation that the ES must be prepared by persons who by virtue of their qualifications or experience have in the opinion of the competent authority sufficient expertise to ensure the completeness and quality of the ES'. Therefore, although there may be no clear definition provided in the legislation of what constitutes a 'competent expert', it will be increasingly important for those who undertake WIA to be identified and for their qualifications and experience to be described. Use of competent WIA experts is important not just to meet the requirements of the new legislation but also to drive up quality. Badr et al. (2004) noted an improvement in WIA in the period from 1993 to 2001 and attributed that in part to 'increasing professionalisation of the impact assessment consultancy sector', resulting from factors such as the availability of post-graduate training courses and professional accreditation schemes.

It is reasonable to assume that competent WIA experts may require a university degree in a relevant subject, membership or chartership of a relevant professional body and sufficient experience. In relation to WIA various degree subjects could be considered relevant, as practitioners range from water scientists, to aquatic ecologists and flood engineers. In the UK relevant professional bodies include, for example, the

Chartered Institution of Water & Environmental Management (CIWEM), the Institute of Environmental Management & Assessment (IEMA) and the Chartered Institute of Ecology & Environmental Management (CIEEM). IEMA operates an EIA Quality Mark scheme whereby corporate members are externally assessed for quality on an annual basis, including telephone interviews with topic specialists. The scheme also allows individuals to apply for various 'EIA practitioner' grades. This scheme, or an amended version of it, would provide an effective mechanism to demonstrate the competency of WIA experts.

Requirements which may require some changes to current practice

Seven of the new requirements are predicted to give rise to some changes to current practice. Of these it is considered that the following are generally dealt with adequately through current WIA practice but that greater clarity would be achieved by according them separate headings within the WIA chapter of the ES: evolution of the baseline environment; climate change; climate change adaptation; and monitoring and post project analysis. Their inclusion in a discrete section would demonstrate compliance with the new regulations, even if the section simply explained why they had been scoped out of further analysis. This would be particularly important in the case of monitoring and post-project analysis as the new Directive inserts the following article: 'Article 10a Member States shall lay down rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive. The penalties thus provided for shall be effective, proportionate and dissuasive.' Thus developers could potentially be fined for not implementing the monitoring and mitigation that they have committed to in the WIA. By including a section on monitoring and post-project analysis the developer's commitment will be clearer and it will be easier to carry it through to the following stages of the Construction

Environmental Management Plan and the operational stage management plan(s).

The Welsh (WG 2016) and Scottish (SG 2016) consultation documents appear to take the view that current arrangements for ensuring that appropriate monitoring is conducted, through planning conditions and obligations, will meet the requirements of the new Directive, and that requirements for monitoring should remain flexible. Monitoring was judged to have been sufficiently addressed to meet the requirements of the new EIA Directive in the majority of WIAs reviewed in the current study. However, Badr et al. (2004) found that provision for, and commitment to monitoring in the 50 WIAs that they reviewed was only graded satisfactory in 24 per cent of cases. It is therefore likely that even if current practice is generally sufficient to meet the basic requirements of the new EIA Directive, more work will be required to raise overall quality in relation to monitoring.

Use of water resources was only covered in the power station ES, probably because the other development types would not be predicted to use large quantities of water during either construction or operation. However, given the specific requirement of the new EIA Regulations to consider use of water resources it is recommended that estimates for the quantity of water to be used during construction and operation, and their sources, are provided even if the quantities are anticipated to be low. The impact and level of significance can then be initially assessed, with the topic subsequently scoped out if not likely to be significant. Wastewater and hydromorphology were considered within the majority of the ESs, however little quantitative information was provided. As the new EIA Regulations refer to quantities it is recommended that this information is provided. Clarification is needed as to whether the term ‘waste’ used in the new Regulations also includes wastewater. A lack of detail in WIAs regarding use of water resources and production of wastewater was also recorded by Badr et al. (2004)

who reported that ‘detailed information was not provided on the quantity and source(s) of water used during the various stages of a project lifecycle in two thirds of cases.’

Requirements which are not predicted to require changes to current practice

Four of the new requirements are not predicted to result in changes, as it was considered that current WIA practice already meets the requirements of the new EIA Directive. These include: biodiversity; uncertainties; major accidents and disasters; and the Water Framework Directive (European Parliament & Council 2000). The Scottish (SG 2016) and Welsh (WG 2016) consultation documents indicate that significant changes to practice are not anticipated in these areas. However, the Scottish document raises the possibility that the new Scottish EIA Regulations could include a provision that no construction for an EIA development can take place until any relevant operational permits required under the listed Directives (which include the Water Framework Directive as amended) have been granted. This may require, for example, a WFD Risk Assessment to be carried out so as to obtain a flood risk activity permit (Environment Agency 2016) before construction commences.

Guidance

The key guidance referenced in Table 3 already covers the majority of the requirements of the new EIA Directive, although in some cases, such as human health, it would be helpful to have more detailed guidance directly applicable to WIA. However, there is as yet no guidance published on what constitutes a competent expert in WIA (or wider EIA) and it will therefore be important for such guidance to be made available as soon as the new EIA Directive is transposed into UK law. Given that the government and devolved administrations appear to be reluctant to issue such guidance, it will be important for professional bodies such as IEMA, CIWEM and CIEEM to take a lead in

this area. As the requirement to use competent experts is now directly referenced in the new EIA Directive it is likely that this will become an increasing area of legal challenge. Therefore without guidance from professional bodies it may be the lawyers, rather than the professionals, who end up defining what constitutes a competent expert.

The detailed guidance on WFD Assessment is not targeted at general WIA practitioners, being designed primarily for use by regulators such as the Environment Agency. Appropriate guidance should therefore be developed , especially given the requirement arising from the new EIA Directive for Member States to 'provide for coordinated and/or joint procedures fulfilling the requirements of the relevant Union legislation', including the EIA and WFD Directives.

Although the key UK guidance on WIA is reasonably comprehensive it suffers from being split into a large number of different documents covering the various aspects of WIA. This is a more complicated situation than is the case for many other environmental topics, where comprehensive guidance is available in a single or small number of documents (e.g. Guidelines for Landscape & Visual Impact Assessment (Landscape Institute & IEMA 2013) provide comprehensive guidance for landscape and visual impact assessment within a single document). Given the disparate nature of the water environment it would be a challenge to produce a single comprehensive guidance document for WIA. However, an overarching WIA guidance document that signposts other subsidiary guidance would still be useful for practitioners. This already exists to an extent in the second edition of Methods of Environmental Impact Assessment (Morris & Therivel 2001), but this document now requires updating as it is more than 15 years old.

Conclusions

The two areas that are identified as likely to require significant changes to WIA practice

are human health and the use of competent experts. These were also identified as potentially giving rise to more substantial changes to general EIA practice in the UK by Fischer et al. (2016). However, the situation is variable in other European countries. For example, the definition of competent experts is likely to be a significant issue in Ireland (Fry et al. 2016), but not in Estonia which already has a system to license EIA experts which has been in place since 1992 (Peterson & Kalle 2016). In Portugal human health is only partly addressed by existing legislation and practise (Ramos et al. 2016) but in Spain human health was already covered by previous legislation (Martinez-Orozco et al. 2016).

The other areas that Fischer et al. (2016) identified as most significant for general EIA practice, including climate change, post-project analysis / monitoring and major accidents and disasters, are not considered to require substantial changes to WIA practice. That is because climate change and flood mitigation are standardly factored into hydrological studies, and potential disasters arising for example from major spillages and flooding are also routinely considered in WIA. Although the quality of post-project analysis and monitoring commitments could be improved, it is not considered that significant changes to WIA practice will be required to meet the requirements of the new EIA Directive. That is because five out of the eight ESs that were reviewed covered monitoring and it was considered that monitoring was not necessarily required in the other three ESs. As well as enabling compliance with the new EIA Directive, greater emphasis on using competent experts is likely to improve the quality of WIAs.

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References

Badr E-SA, Cashmore M, Cobb D. 2004. The consideration of impacts upon the aquatic environment in Environmental Impact Statements in England and Wales. JEAPM. 6(1):19−49.

BSI. 2015. PD 6900:2015 Environmental Impact Assessment for offshore renewable energy projects − guide. London: BSI Standards Limited.

CIEEM. 2016. Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and coastal [Internet]. 2nd ed. Winchester: Chartered Institute of Ecology and Environmental Management; [cited 2016 Nov 26]. Available from: http://www.cieem.net/ecia-guidelines-terrestrial-

Department for Communities & Local Government: Planning practice guidance [Internet]. c2014–2016. London: Department for Communities & Local Government; [cited 2016 Nov 26]. Available from: http://planningguidance.communities.gov.uk/blog/guidance/

Department for Transport. 2015. TAG unit A3: environmental impact appraisal [Internet]. London: Department for Transport. Chapter 10, Impacts on the water environment; p. 68–76; [cited 2016 Nov 26]. Available from: https://www.gov.uk/government/publications/webtag-tag-unit-a3-environmental-impact-appraisal-december-2015

Environment Agency. 2010. Assessing new modifications for compliance with WFD: detailed supplementary guidance: supplementary guidance 488_10_SD01 [Internet]. Version 1. Rotherham: Environment Agency; [cited 2016 Nov 26]. Available from: https://studylib.net/doc/5902727/488_10_sd01-assessing-new-modifications-for-compliance-with

Environment Agency: complying with the Water Framework Directive: marine dredging [Internet]. c2012–2016. Rotherham: Environment Agency; [cited 2016 Nov 26]. Available from:

https://www.gov.uk/government/publications/complying-with-the-water-framework-directive-marine-dredging

Environment Agency. 2016. Water Framework Directive risk assessment: how to assess the risk of your activity [Internet]. Rotherham: Environment Agency; [cited 2016 Nov 26]. Available from: https://www.gov.uk/government/publications/water-framework-directive-how-to-assess-the-risk-of-your-activity

European Parliament and Council. 2000. Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Official Journal of the European Communities. L327: 1–73.

European Parliament and Council. 2014. Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. Official Journal of the European Union. L124: 1–18.

Fischer, TB. 2016. Implications of the revised EIA Directive – editorial. UVP-report. 30(2): 59–60.

Fischer TB, Therivel R, Bond A, Fothergill J, Marshall R. 2016. The revised EIA Directive – possible implications for practice in England. UVP-report. 30(2): 106–112.

Fry J, Grist B, González A. 2016. An analysis of the implications of the revised EIA Directive in the Republic of Ireland. UVP-report. 30(2): 93–100.

Glasson J, Therivel R, Chadwick A, editors. 2012. Introduction to Environmental Impact Assessment. 4th ed. Abingdon: Routledge.

Gormley A, Pollard S, Rocks S, Black E. 2011. Guidelines for environmental risk assessment: green leaves III [Internet]. London: Department for Environment, Food & Rural Affairs; [cited 2016 Nov 26]. Available from: https://www.gov.uk/government/publications/guidelines-for-environmental-risk-assessment-and-management-green-leaves-iii

Highways Agency, Transport Scotland, Welsh Assembly Government, Department for Regional Development Northern Ireland. 2009. Design manual for roads and bridges [Internet]. Birmingham (UK): Highways Agency. Volume 11, Environmental assessment; Section 3, Environmental assessment techniques; Part 10, HD 45/09 Road drainage and the water environment; p. 1/1–A5/3;

[cited 2016 Nov 26]. Available from: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3.htm

IEEM Steering Group. 2010. Guidelines for ecological impact assessment in Britain and Ireland: marine and coastal [Internet]. Winchester: Institute of Ecology and Environmental Management; [cited 2016 Nov 26]. Available from: http://www.cieem.net/ecia-guidelines-marine-

Landscape Institute, IEMA. 2013. Guidelines for landscape and visual impact assessment. 3rd ed. Abingdon: Routledge.

Martinez-Orozco JM, González-Calderón B, Sobrini I. 2016. Reviewing the EIA process in Spain: streamlining and beyond. UVP-report. 30(2): 88–92.

MMO: marine licensing: impact assessments [Internet]. c2014–2016. Newcastle upon Tyne: Marine Management Organisation; [cited 2016 Nov 26]. Available from: https://www.gov.uk/guidance/marine-licensing-impact-assessments

Montgomery J, Le Gouais P, LeBrecht H, Fothergill J. 2015. IEMA Environmental Impact Assessment guide to climate change resilience and adaptation [Internet]. Lincoln: Institute of Environmental Management & Assessment; [cited 2016 Nov 26]. Available from: http://www.iema.net/

Morris P, Therivel R, editors. 2001. Methods of Environmental Impact Assessment. 2nd ed. Abingdon: Spon Press.

Murphy J, Cocker A, Munro B, Vetori C, Woodward R. 2012. Integrating WFD in EIA: experience so far [Internet]. Lincoln: Institute of Environmental Management & Assessment; [cited 2016 Nov 26]. Available from: http://www.iema.net/

Mustow SE, Burgess PF, Walker N. 2005. Practical methodology for determining the significance of impacts on the water environment. Water Environ J. 19(2): 100–108.

Peterson K, Kalle H. 2016. Transposing the revised EIA Directive into national legislation in Estonia. UVP-report. 30(2): 77–81.

Ramos TB, Mascarenhas A, Polido A. 2016. Challenges and opportunities for the revised EIA Directive implementation in Portugal. UVP-report. 30(2): 82–87.

[SG] Scottish Government. 2016. Consultation on Environmental Impact Assessment amending Scottish Environmental Impact Assessment regulations to transpose Directive 2014/52/EU [Internet]. Edinburgh: Scottish Government; [cited 2016 Nov 26]. Available from: http://www.gov.scot/Publications/2016/08/2499

Scottish Natural Heritage. 2013. A handbook on environmental impact assessment: guidance for competent authorities, consultees and others involved in the Environmental Impact Assessment process in Scotland [Internet]. 4th ed. Inverness: Scottish Natural Heritage. Appendix 6, Effects on the marine environment; p. 236–241; [cited 2016 Nov 26]. Available from: http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=2098

UKTAG: resources [Internet]. c2016. Edinburgh: UK Technical Advisory Group on the Water Framework Directive; [cited 2016 Nov 26]. Available from: http://www.wfduk.org/resources

Vohra S. 2005. Briefing report no. 2: integrating health into Environmental Impact Assessment [Internet]. Hounslow: Living Knowledge; [cited 2016 Nov 26]. Available from: http://www.apho.org.uk/resource/item.aspx?RID=118050

[WG] Welsh Government. 2016. Welsh Government consultation document: proposed changes to how Environmental Impact Assessment applies to town and country planning [Internet]. Cardiff: Welsh Government; [cited 2016 Nov 26]. Available from: https://consultations.gov.wales/consultations/changes-how-environmental-impact-assessment-applies-town-and-country-planning

Table 1. Environmental Statements reviewed

Number	Title	Type of Development	Date Published	Country
01	OSL Deepwater Jetty	Deepwater jetty in Thames Estuary and landside storage infrastructure	February 2016	England
02	West Anglia Main Line	Additional 5.6 km of railway track installed alongside existing track and associated works	April 2016	England
03	River Parrett Dredge – Northmoor Pump Station to Linden Farm	Removal of silt along a c. 750m stretch of river	January 2016	England
04	Keadby II Combined Cycle Gas Turbine Generating Station	Combined cycle gas turbine generating station with a generation capacity of up to 820 MW	February 2016	England
05	Kirkby Slate Quarry Proposed Extension	Extension of workings at slate quarry by 3.2ha	March 2016	England
06	Loch Hill Wind Farm	New wind farm of c. 28.8 MW	April 2016	Scotland
07	M4 Corridor around Newport	New 23 km section of three lane motorway and associated compensatory measures	March 2016	Wales
08	Deep Green Holyhead Deep	Installation of three 0.5 MW tidal energy generation units, intra-array cables connecting the devices, electrical equipment and export cable to shore	March 2016	Wales

Table 2. New requirements of EIA Directive (2014/52/EU) and implications for UK WIA*

N^{o}	**New requirements (in italics)**	**Potential implications for UK WIA practice (type of change in bold)**
1	Annex IV: A description…'*of the operational phase*',…'*energy demand and energy used*' … '*and natural resources (including water, land, soil and biodiversity)*'	**Use of water resources** was not specifically required to be described under the previous EIA Directive (2011/92/EU).
2	Annex IV: '*quantities and types of waste produced during the construction and operation phases*'	The term 'waste' could be construed as also including **wastewater**, the quantities of which did not specifically require description under the previous EIA Directive.
3	Annex IV: *'A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project...'*	**Evolution of the baseline water environment in the absence of the development** now needs to be considered.
4	Annex IV: A description of … '*human health, biodiversity … climate (for example greenhouse gas emissions, impacts relevant to adaptation)...*	**Climate change, climate change adaptation**, **human health and biodiversity** are now specifically included. Annex 3 states that 'the characteristics of projects must be considered, with particular regard to: ... (g) the risks to human health (**for example due to water contamination**....). In relation to marine biodiversity the preamble to the new Directive states that: '(12) ...environmental impact assessment and screening procedures for projects in the marine environment should take into account **the characteristics of those projects with particular regard to the technologies used (for example seismic surveys using active sonars)**'.
5	Annex IV: A description of ... water (*for example hydromorphological changes, quantity and quality)*	The examples of **hydromorphological changes, quantity and quality** have been added to the new Directive.
6	Annex IV: A description of the forecasting methods '*or evidence… and the main uncertainties involved'*	**Uncertainties** now specifically require description.
7	Annex IV: A description of '*where appropriate, of any proposed monitoring arrangements (for example the preparation of post-project analysis)'.*	**Monitoring and post-project analysis** now specifically require consideration.
8	Annex IV: A description of the '*vulnerability of the project to risks of major accidents and/or disasters*'	**Major accidents** and **disasters** now specifically require consideration. The preamble to the new EIA Directive states that: '(15) precautionary actions need to be taken for certain projects which, because of their vulnerability to major accidents, and/or natural disasters (**such as flooding, sea level rise**, or ...) are likely to have significant adverse effects on the environment.
9	Article 1 (5) 3 (a): '*the developer shall ensure that the environmental impact assessment report is prepared by competent experts*'	There is now a requirement for WIA to be undertaken by **competent experts**, evidence of which will need to be provided.
10	Article 1 (2) (a): *'In the case of projects for which the obligation to carry out assessments of the effects on the environment arises simultaneously from this Directive and from Council Directive 92/43/EEC and/or Directive 2009/147/EC of the European Parliament and the Council, Member States shall, where appropriate, ensure that coordinated and/or joint procedures fulfilling the requirements of that Union legislation are provided for'*	This new requirement relates to the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC). However, the preamble to the new EIA Directive also makes the following reference to the **Water Framework Directive** (2000/60/EC) in Clause (37): 'where the obligation to carry out assessments related to environmental issues arises simultaneously from this Directive and from other Union legislation, such as Directive 2000/60/EC..., Member States should be able to provide for coordinated and/or joint procedures fulfilling the requirements of the relevant Union legislation'.

Note: * Format of table based on Fischer et al. (2016)

Table 3. Key WIA guidance

Source of WIA Guidance	**Relevant Areas Covered**
General	
Planning Practice Guidance (Department for Communities & Local Government c2014–2016)	Flood risk & coastal change; Water supply, wastewater and water quality; England only
Design Manual for Roads & Bridges (Highways Agency et al. 2009)	Flood risk; Pollution risk to surface water and groundwater; Whole of UK; Specific to roads & bridges
Transport Analysis Guidance (Department for Transport 2015)	Wide range of water environment features – freshwater, estuarine, marine; England only; Specific to transport schemes, although Mustow *et al.* (2005) previously adapted the impact significance methodology for wider use
WIA Guidance (Morris & Therivel 2001)	Methods of EIA, including sections relating to Water, Freshwater ecology and Coastal ecology and geomorphology. Whole UK
Green Leaves III (Gormley et al. 2011)	Source-pathway-receptor methodology relevant to the water environment
Ecological	
Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal (CIEEM 2016)	Freshwater and coastal ecology; UK and Ireland
Guidelines for Ecological Impact Assessment in Britain and Ireland - Marine and Coastal (IEEM Steering Group 2010)	Coastal and marine ecology; UK and Ireland
WFD	
Assessing new modifications for compliance with WFD: detailed supplementary guidance (Environment Agency 2010)	Wide range of water environment features; Freshwater, estuarine, coastal; Relates to WFD compliance; Internal document only; Specific to England
Water Framework Directive Risk Assessment – How to Assess the Risk of your Activity (Environment Agency 2016)	Guide to WFD risk assessment; Specific to England
Clearing the waters: guides to explain the implications of the Water Framework Directive on marine dredging applications and operations (Environment Agency c2012–2016)	Guides to carrying out WFD assessment for marine dredging, the methodologies also being relevant to WFD assessment as a whole; Specific to England but with wider relevance
UKTAG Guidance (UKTAG c2016)	Range of detailed technical guidance for assessing the status of the water environment; Freshwater, estuarine, coastal; Relates to WFD compliance; Whole UK; Specific methods e.g. biological
IEMA Guidance on Integrating WFD into EIA	Environment Agency note on best practice; Relevant to whole

(Murphy et al. 2012)	of UK
Marine	
Marine Management Organisation Guidance (MMO c2014–2016)	High level guidance on EIA in the marine environment; England & Wales
SNH Marine Guidance (Scottish Natural Heritage 2013)	Guidelines for marine environment EIA; Scotland
BSI EIA Guide for Offshore Renewables (BSI 2015)	Guidelines for EIA of offshore renewable energy projects; Whole UK
Climate Change & Health Impact Assessment	
IEMA Climate Change Resilience and Adaptation Guidance (Montgomery et al. 2015)	Generic Guidance, Water covered alongside other factors
Health Impact Assessment Guidance (Vohra 2005)	Generic Guidance, Water covered alongside other factors

Table 4. Review of existing practice in relation to new requirements of EIA Directive (2014/52/EU)

No.	New Requirement	No. of ESs Covering Requirement*	Comments	Recommendation	Extent of change§
1	Use of water resources	1	Water consumption only covered in the power station EIA	Water consumption to be initially considered, even if then scoped out.	!
2	Wastewater quantities and types	6	Numerical estimates of quantity only given in a few cases.	More precise quantification. Include polluted runoff in the definition of wastewater.	! (?)
3	Evolution of baseline environment	5	When this was considered it was usually only in relation to climate change.	Add a separate heading of 'evolution of baseline environment'	!
4(a)	Climate change	5	Impact of climate change on flooding and rainfall considered.	Add a separate heading of 'climate change & climate change adaptation'	!
4(b)	Climate change adaptation	5	Adaptation considered in relation to flood protection.	Add a separate heading of 'climate change & climate change adaptation'	!
4(c)	Human health	1	Human health in relation to WIA only specifically considered in dredging ES.	Human health to be considered.	!!!
4(d)	Biodiversity	8	Covered in Ecology chapter and sometimes also in Water chapter	No action needed – addressed as standard	✓
5	Hydromorphological changes, quantity and quality	8	Covered in all cases but often at a high level only and in relation to drainage systems.	More quantification required.	!
6	Uncertainties	7	Standard practice for IEMA Quality Mark members (although absent in one ES)	No action needed – addressed as standard	✓
7	Monitoring and post-project analysis	5	Monitoring not recommended in all cases (but not necessarily required)	Add a separate heading of 'monitoring and post-project analysis', even if this concludes that none is required	!
8	Major accidents and disasters	7	Potential for spillages and flooding considered in most cases.	No action needed – addressed as standard	✓
9	Competent experts	0	Names, qualifications and experience of experts not stated	Relevant information to be added	!!!
10	Water Framework Directive (WFD)	8	WFD considered in all cases and in some a separate WFD Assessment was carried out	No action needed – addressed as standard	✓

Note: *Out of eight ESs reviewed; §Scale based on Fischer et al. (2016); ✓ Current practice already meeting requirement; ! some changes to current practice likely to be necessary; !!! potentially giving rise to more substantial changes to current practice; (?) extent of change not fully clear.